

WHAT IS CLAIMED IS:

1               1. In a computer system, a method of generating pronunciations for a  
2 word that is represented by a waveform and text, such that the pronunciations are spelled by  
3 phones in a phonetic alphabet for storage in a pronunciation dictionary, the method  
4 comprising:

- 5               a. graphing sets of initial pronunciations; thereafter  
6               b. in an ASR subsystem determining a highest-scoring set of initial  
7 pronunciations;  
8               c. generating sets of alternate pronunciations, wherein each set of alternate  
9 pronunciations includes the highest-scoring set of initial pronunciations with a lowest-  
10 probability phone of the highest-scoring initial pronunciation substituted with a unique-  
11 substitute phone;  
12              d. graphing the sets of alternate pronunciations;  
13              e. determining in the ASR subsystem a highest-scoring set of alternate  
14 pronunciations; and  
15              f. adding to a pronunciation dictionary the highest-scoring set of alternate  
16 pronunciations.

1               2. The method of claim 1, wherein step a. includes weighting the sets of  
2 initial pronunciations with linguistic probabilities.

1               3. The method of claim 2, wherein linguistic probabilities are calculated  
2 according to a transformation probability  $P(B_i|A)$ , wherein  $B_i$  and  $A$  represent respective  
3 sequence of phones for respective sets of pronunciations.

1               4. The method of claim 1, wherein step d. includes weighting the sets of  
2 alternate pronunciations with linguistic probabilities.

1               5. The method of claim 4, wherein linguistic probabilities are calculated  
2 according to a transformation probability  $P(B_i|A)$ , wherein  $B_i$  and  $A$  represent respective  
3 sequence of phones for respective sets of pronunciations.

1               6. The method of claim 1 further comprising in the ASR subsystem  
2 traversing branches of graphs of the sets of initial and alternate pronunciations to generate  
3 scores for the sets of initial and alternate pronunciations.

1               7.     The method of claim 1 further comprising in the ASR subsystem  
2 generating transcriptions of acoustic data spoken by a plurality of speakers, wherein the  
3 transcriptions are included in the transcribed acoustic data.

1               8.     The method of claim 7 further comprising in the ASR subsystem  
2 collecting feedback from the plurality of speakers to affirm or disaffirm correct generation of  
3 the transcriptions, wherein if the transcriptions are affirmed as correct then the transcriptions  
4 are entered in the transcribed acoustic data.

1               9.     The method of claim 1 further comprising  
2                   g. generating a phone probability for each phone in the highest-scoring set of  
3 initial pronunciations, wherein the lowest-probability phone has a lowest-phone probability.

1               10.    The method of claim 1, further comprising:  
2                   g. generating the sets of initial pronunciations from initial pronunciations  
3 generated by a letter-to-phone engine and/or extracted from the pronunciation dictionary.

1               11.    The method of claim 1, wherein steps a., b., c., d., e., and f. are  
2 repeated for each waveform of a plurality of waveforms that represent the word.

1               12.    The method of claim 1, wherein steps c., d., and e. are repeated using  
2 the highest-scoring set of alternate pronunciations as the highest-scoring set of initial  
3 pronunciations.

1               13.    The method of claim 1, wherein the sets of alternate pronunciations  
2 include a set of alternate pronunciations that include the highest-scoring initial pronunciation  
3 with the lowest-probability phone removed.

1               14.    The method of claim 1, wherein the sets of alternate pronunciations  
2 include additional sets of alternate pronunciations that include the highest-scoring initial  
3 pronunciation having a unique phone inserted adjacent to the lowest-probability phone.

1               15.    The method of claim 1, wherein the sets of alternate pronunciations  
2 include additional sets of alternate pronunciations that include the highest-scoring initial  
3 pronunciation having a sequence of two phones substituted for the lowest-probability phone.

1               16.     The method of claim 1, wherein the sets of alternate pronunciations  
2 include additional sets of alternate pronunciations that include the highest-scoring initial  
3 pronunciation having the lowest-probability phone and a right neighboring phone substituted  
4 with a unique phone.

1               17.     The method of claim 1, wherein the sets of alternate pronunciations  
2 include additional sets of alternate pronunciations that include the highest-scoring initial  
3 pronunciation with the lowest-probability phone and a left neighboring phone substituted  
4 with a unique phone.

1               18.     The method of claim 1, further comprising:  
2               g. adding the highest-scoring set of initial pronunciations to the pronunciation  
3 dictionary.

1               19.     In a computer system, a method of generating pronunciations for a  
2 word that is represented by a waveform and text, such that the pronunciations are spelled by  
3 phones in a phonetic alphabet for storage in a pronunciation dictionary, the method  
4 comprising:  
5               a. graphing sets of initial pronunciations; thereafter  
6               b. in an ASR subsystem determining a highest-scoring set of initial  
7 pronunciations;  
8               c. generating a set of alternate pronunciations that includes the highest-scoring  
9 set of initial pronunciations with a lowest-probability phone of the highest-scoring initial  
10 pronunciation substituted with a unique-substitute phone; and  
11              d. adding to a pronunciation dictionary the set of alternate pronunciations and  
12 the highest-scoring set of initial pronunciations.

1               20.     The method of claim 19, wherein step a. includes weighting the sets of  
2 initial pronunciations with linguistic probabilities.

1               21.     The method of claim 20, wherein linguistic probabilities are calculated  
2 according to a transformation probability  $P(B_i|A)$ , wherein  $B_i$  and  $A$  represent respective  
3 sequence of phones for respective sets of pronunciations.

1                   22.     The method of claim 19 further comprising in the ASR subsystem  
2     traversing branches of the graph to generate scores for the sets of initial pronunciations.

1                   23.     The method of claim 19 further comprising in the ASR subsystem  
2     generating transcriptions of acoustic data spoken by a plurality of speakers, wherein the  
3     transcriptions are included in the transcribed acoustic data.

1                   24.     The method of claim 23 further comprising in the ASR subsystem  
2     collecting feedback from the plurality of speakers to affirm or disaffirm correct generation of  
3     the transcriptions, wherein if the transcriptions are affirmed as correct then the transcriptions  
4     are entered in the transcribed acoustic data.

1                   25.     The method of claim 19 further comprising  
2                       e. generating a phone probability for each phone in the highest-scoring set of  
3     initial pronunciations, wherein the lowest-probability phone has a lowest-phone probability.

1                   26.     The method of claim 19 further comprising:  
2                       e. generating the sets of initial pronunciations from initial pronunciations  
3     generated by a letter-to-phone engine and/or extracted from the pronunciation dictionary.

1                   27.     The method of claim 19, wherein steps a., b., c., and d. are repeated for  
2     each waveform of a plurality of waveforms that represent the word.

1                   28.     The method of claim 19, wherein step c. is repeated using the set of  
2     alternate pronunciations as the highest-scoring set of initial pronunciations.